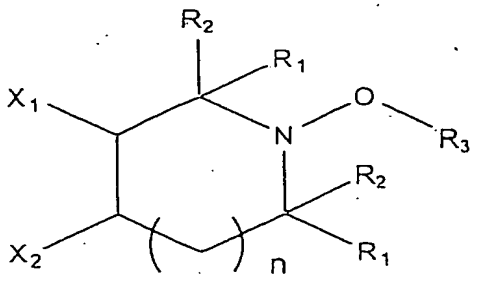
CLAIMS

1. A process for the preparation of block copolymers by means of radicalic polymerization which comprises:

a) polymerizing a vinylaromatic monomer at a temperature higher than or equal to 120°C in the presence of a radicalic initiating system ~~comprising~~ consisting of a compound having general formula (I):



wherein R_1 and R_2, the same or different, represent a methyl or ethyl radical, X_1 represents a hydrogen atom, X_2 represents a hydrogen atom or a hydroxyl or X_1 and X_2, the same or different, represent a C_1-C_4 (iso)alkyl radical, or, they jointly form an aromatic ring, n is equal to zero or 1 and R_3 represents a radical selected from one of the following groups:

$-C(CH_3)_2-CN$;

$-C(CH_3)_2-Ph$;

$-CHCH_3Ph$;

or R_3 is absent, as in that position there is an uncoupled electron; used in a mixture with <*>

spect to the total moles of the monomers fed.

~~8. The process according to any of the previous claims, wherein the initiator having general formula (I) is used in a mixture with~~ * radical generator compounds (G) selected from peroxides, peresters, percarbonates, azobisdialkyldinitriles, with molar ratios I/G lower than 4;

8 → 9. The process according to claim ~~8~~ 1, wherein the initiator having general formula (I) is used with free radical generators (G) selected from dibenzoyl peroxide, dicumyl peroxide, N,N'-azobis-(diisobutyronitrile) with molar ratios I/G ranging from 1 to 3.

9 → ~~10~~. The process according to any of the previous claims, wherein the polymerization of both steps (a) and (b) is carried out batchwise, in continuous or semi-continuous at a temperature higher than 120°C and at a pressure which is such as to maintain the monomers in liquid phase.

10 → ~~11~~. The process according to any of the previous claims, wherein in the radicalic initiating system having general formula (I), X_1 and X_2 jointly form an aromatic ring, and n is equal to zero.

11 → ~~12~~. The process according to claim ~~11~~ 10, wherein the initiator having general formula (I) is selected from:

1,1,3,3-tetraethyl-2-(2-cyanoprop-2-yl)-2,3-dihydro-1H-isoindole;

1,1,3,3-tetraethyl-2-(2-phenylprop-2-yl)-2,3-dihydro-1H-

isoindole;

1,1,3,3-tetraethyl-2-(2-phenylethyl)-2,3-dihydro-1H-isoindole;

1,1,3,3-tetramethyl-2-(2-cyanoprop-2-yl)-2,3-dihydro-1H-isoindole;

1,1,3,3-tetramethyl-2-(2-phenylprop-2-yl)-2,3-dihydro-1H-isoindole;

1,1,3,3-tetramethyl-2-(2-phenylethyl)-2,3-dihydro-1H-isoindole.

12 ~~13~~. Block copolymers based on vinylaromatic monomers and monomers deriving from (meth)acrylic acid obtained with the process according to any of the previous claims.